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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/563,679	06/09/2006	John Christopher Rudin	200300815-4	1520
22879 7590 08/05/2009 HEWLETT PACKARD COMPANY P O BOX 272400, 3404 E. HARMONY ROAD INTELLECTUAL PROPERTY ADMINISTRATION FORT COLLINS, CO 80527-2400				
EXAMINER GARRITY, DIANA C				
ART UNIT 2814		PAPER NUMBER		
NOTIFICATION DATE 08/05/2009		DELIVERY MODE ELECTRONIC		

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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 10/563,679
Filing Date: June 09, 2006
Appellant(s): RUDIN, JOHN CHRISTOPHER

Anthony F. Bonner, Jr., reg. no. 55,012
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed April 21, 2009 appealing from the Office action mailed December 29, 2008.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 102

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1-9, 25 and 26 are rejected under 35 U.S.C 102(b) as being anticipated by Shi et al. (US 6,326,640; hereinafter “Shi”).

Regarding claim 1, Shi (Figure 7) teaches a transistor device having a metallic

source electrode, a metallic drain electrode, a metallic gate electrode and a channel in a deposited semiconductor material, the transistor device comprising:

a first layer comprising the metallic gate electrode (71), a first metal portion of the metallic source electrode (75, upper half), and a first metal portion of the metallic drain electrode (76, upper half);

a second layer comprising a second metal portion of the metallic source electrode (75, lower half), a second metal portion of the metallic drain electrode (76, lower half), the deposited semiconductor material (74) and dielectric material (72) between the semiconductor material and the metallic gate electrode; and

a third layer comprising a substrate (73), wherein the first, second, and third layers are arranged in an order such that the second layer is positioned between the first layer and the third layer.

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Regarding claim 2, The expression “the metallic source electrode, drain electrode, and gate electrode comprising electro-deposited metal” is/are taken to be a product by process limitation and is given no patentable weight. Product by process claim directed to the product per se, no matter now actually made, *In re Hirao*, 190 USPQ 15 at 17 (footnote 3). See *In re Fessman*, 180 USPQ 324, 326 (CCPA 1974); *In re Marosi et al.*, 218 USPQ 289, 292 (Fed. Cir. 1983); *In re Brown*, 459 F.2d 531, 535, 173 USPQ 685, 688 (CCPA 1972); *In re Pilkington*, 411 F.2d 1345, 1348, 162 USPQ 145, 147, (CCPA 1969); *Buono v. Yankee Maid Dress Corp.*, 77F.2d 274, 279, 26 USPQ 57, 61 (2d. Cir. 1935); and particularly *In re Thorpe*, 227 USPQ 964, 966 (Fed. Cir. 1985), all of which make it clear that it is the patentability of the final structure of the product “gleaned” from the process steps which must be determined in a “product by process” claim, and not the patentability of the process. See also MPEP 2113. Moreover, an old and obvious patent produced by a new method is not a patentable product, whether claimed in “product by process” claims or not.

Note that Applicant has burden of proof in such cases as the above case law makes clear.

Regarding claim 3, Shi teaches the first, second, and third layers are each of respective substantially uniform thickness (Figure 7 – the three layers are generally the same thickness as shown in the drawing).

Regarding claim 4, Shi teaches that the third layer includes adhesive bonding the substrate to the transistor device (the second layer is attached to the third).

Regarding claim 5, Shi teaches the first layer has a substantially planar surface (See Figure 7, it is substantially planar) comprising substantially planar portions of the source (75), drain (76) and gate (71) electrodes.

Regarding claim 6, Shi teaches the deposited semiconductor material (74) comprises organic semiconductor material.

Regarding claim 7, The expression “the deposited semiconductor material comprises indications that it was deposited from a liquid” is/are taken to be a product by process limitation and is given no patentable weight. Product by process claim directed to the product per se, no matter now actually made, *In re Hirao*, 190 USPQ 15 at 17 (footnote 3). See *In re Fessman*, 180 USPQ 324, 326 (CCPA 1974); *In re Marosi et al.*, 218 USPQ 289, 292 (Fed. Cir. 1983); *In re Brown*, 459 F.2d 531, 535, 173 USPQ 685, 688 (CCPA 1972); *In re Pilkington*, 411 F.2d 1345, 1348, 162 USPQ 145, 147, (CCPA 1969); *Buono v. Yankee Maid Dress Corp.*, 77F.2d 274, 279, 26 USPQ 57, 61 (2d. Cir. 1935); and particularly *In re Thorpe*, 227 USPQ 964, 966 (Fed. Cir. 1985), all of which make it clear that it is the patentability of the final structure of the product “gleaned” from the process steps which must be determined in a “product by process” claim, and not the patentability of the process. See also MPEP 2113. Moreover, an old and obvious patent produced by a new method is not a patentable product, whether claimed in “product by process” claims or not.

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Note that Applicant has burden of proof in such cases as the above case law makes clear.

Regarding claim 8, Shi teaches the semiconductor material (74) is embedded in the device and overlain by the gate electrode (71).

Regarding claim 9, Shi teaches insulating material (air/physical distance) separating the gate electrode (71) from the source and drain electrode (75 and 76).

Regarding claim 25, Shi teaches a transistor having a metallic source electrode, a metallic drain electrode, a metallic gate electrode and a channel in a deposited semiconductor material, the transistor device comprising:

- a first upper planar layer comprising the metallic gate electrode (71), a first metal portion of the metallic source electrode (75, upper half), and a first metal portion of the metallic drain electrode (76, upper half);
- a second middle planar layer comprising a second metal portion of the metallic source electrode (75, lower half), a second metal portion of the metallic drain electrode (76, lower half), the deposited semiconductor material (74) and dielectric material (72) between the semiconductor material and the metallic gate electrode; and
- a third lower planar layer comprising a substrate (73), wherein first, second and third planar layers are arranged in order such that the second middle layer is positioned between the first upper layer and the third lower layer,

the gate electrode (71) occupies only the first upper planar layer and the channel (74) occupies only the second middle planar layer, the metallic source electrode (75) consists of the first metal portion of the metallic source electrode overlying the second metal portion of the metallic source electrode, and the metallic drain electrode (76) consists of the first metal portion of the metallic drain electrode overlying the second metal portion of the metallic drain electrode.

The expression “the metallic source electrode, drain electrode and gate electrode comprise electro-deposited metal” is/are taken to be a product by process limitation and is given no patentable weight. Product by process claim directed to the product per se, no matter now actually made, *In re Hirao*, 190 USPQ 15 at 17 (footnote 3). See *In re Fessman*, 180 USPQ 324, 326 (CCPA 1974); *In re Marosi et al.*, 218 USPQ 289, 292 (Fed. Cir. 1983); *In re Brown*, 459 F.2d 531, 535, 173 USPQ 685, 688 (CCPA 1972); *In re Pilkington*, 411 F.2d 1345, 1348, 162 USPQ 145, 147, (CCPA 1969); *Buono v. Yankee Maid Dress Corp.*, 77F.2d 274, 279, 26 USPQ 57, 61 (2d. Cir. 1935); and particularly *In re Thorpe*, 227 USPQ 964, 966 (Fed. Cir. 1985), all of which make it clear that it is the patentability of the final structure of the product “gleaned” from the process steps which must be determined in a “product by process” claim, and not the patentability of the process. See also MPEP 2113. Moreover, an old and obvious patent produced by a new method is not a patentable product, whether claimed in “product by process” claims or not.

Note that Applicant has burden of proof in such cases as the above case law makes clear.

Regarding claim 26, Shi teaches the metallic gate electrode (71) contacts the dielectric material (72).

The expression “the metallic source, gate and drain electrodes consist entirely of electro-deposited metal” is/are taken to be a product by process limitation and is given no patentable weight. Product by process claim directed to the product per se, no matter now actually made, *In re Hirao*, 190 USPQ 15 at 17 (footnote 3). See *In re Fessman*, 180 USPQ 324, 326 (CCPA 1974); *In re Marosi et al.*, 218 USPQ 289, 292 (Fed. Cir. 1983); *In re Brown*, 459 F.2d 531, 535, 173 USPQ 685, 688 (CCPA 1972); *In re Pilkington*, 411 F.2d 1345, 1348, 162 USPQ 145, 147, (CCPA 1969); *Buono v. Yankee Maid Dress Corp.*, 77F.2d 274, 279, 26 USPQ 57, 61 (2d. Cir. 1935); and particularly *In re Thorpe*, 227 USPQ 964, 966 (Fed. Cir. 1985), all of which make it clear that it is the patentability of the final structure of the product “gleaned” from the process steps which must be determined in a “product by process” claim, and not the patentability of the process. See also MPEP 2113. Moreover, an old and obvious patent produced by a new method is not a patentable product, whether claimed in “product by process” claims or not.

Note that Applicant has burden of proof in such cases as the above case law makes clear.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shi ('640).

Regarding claim 12, Shi teaches the device of claim 1. It would have been obvious to one of ordinary skill in the art at the time of the invention to construct a plurality of these transistors on a single substrate for lower cost of mass production. It is well known in the art to construct more than one transistor on a single substrate, and then singulate respective transistors for individual use..

(10) Response to Argument

The appellants argue:

More specifically, the Final Office Action argues the “upper half” of 75 as the first metal portion of the metallic source electrode and the “lower half” of element 75 as the second metal portion of the metallic source electrode (with similar analysis for element 76) (OA page 5, first and second paragraphs). However, this is an incorrect inference. Referring to FIG. 7 of *Shi*, the conductive strips 75 and 76 are single piece elements and thus are part of only one layer. Consequently, the Final Office Action’s arbitrary division of these elements into an “upper half” and a “lower half” is impermissible under the requirements of 35 U.S.C § 102. Further nowhere does *Shi* even suggest “*a second layer comprising a second metal portion of the metallic source electrode, a second metal portion of the metallic drain electrode*” as recited in claim 1. For at least this reason, claim 1 is allowable.

The examiner responds:

The claim is directed toward a completed device. The claimed device claims a first metal portion of a source electrode directly adjacent to a second metal portion of a source electrode (and likewise regarding the drain electrode). In the final device, the two metal portions of the source electrode are indistinguishable from one another (and likewise regarding the drain electrode). In this way, the Shi reference's source electrode

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(Figure 7) 75 is likewise indistinguishable from a lower metal portion of a source electrode located adjacent to an upper metal portion of a source electrode. Thus, examiner maintains that Shi teaches a first layer comprising a metal gate (71), a first metal portion of the metallic source electrode (an upper portion of 75), and a first metal portion of the metallic drain electrode (an upper portion of 76); a second layer comprising a second metal portion of the metallic source electrode (a lower portion of 75), a second metal portion of the metallic drain electrode (a lower portion of 76), the deposited semiconductor material (74) and dielectric material (72) between the semiconductor material and the metallic gate electrode; and a third layer (73) comprising a substrate, wherein the first, second, and third layers are arranged in an order such that the second layer is positioned between the first layer and the third layer.

The appellants argue:

More specifically, the Final Office Action argues the “upper half” of 75 as the first metal portion of the metallic source electrode and the “lower half” of element 75 as the second metal portion of the metallic source electrode (with similar analysis for element 76) (OA page 5, first and second paragraphs). However, this is an incorrect inference. Referring to FIG. 7 of *Shi*, the conductive strips 75 and 76 are single piece elements and thus are part of only one layer. Consequently, the Final Office Action’s arbitrary division of these elements into an “upper half” and a “lower half” is impermissible under the requirements of 35 U.S.C § 102. Further nowhere does *Shi* even suggest “*a second middle planar layer comprising a second metal portion of the metallic source electrode, a second metal portion of the metallic drain electrode*” as recited in claim 25. For at least this reason, claim 25 is allowable.

The examiner responds:

The claim is directed toward a completed device. The claimed device claims a first metal portion of a source electrode directly adjacent to a second metal portion of a source electrode (and likewise regarding the drain electrode). In the final device, the two metal portions of the source electrode are indistinguishable from one another (and

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likewise regarding the drain electrode). In this way, the Shi reference's source electrode (Figure 7) 75 is likewise indistinguishable from a lower metal portion of a source electrode located adjacent to an upper metal portion of a source electrode. Thus, examiner maintains that Shi teaches a first layer comprising a metal gate (71), a first metal portion of the metallic source electrode (an upper portion of 75), and a first metal portion of the metallic drain electrode (an upper portion of 76); a second layer comprising a second metal portion of the metallic source electrode (a lower portion of 75), a second metal portion of the metallic drain electrode (a lower portion of 76), the deposited semiconductor material (74) and dielectric material (72) between the semiconductor material and the metallic gate electrode; and a third layer (73) comprising a substrate, wherein the first, second, and third layers are arranged in an order such that the second layer is positioned between the first layer and the third layer.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

An appeal conference was held on July 1, 2009 between Ms. Diana Garrity (Junior Patent Examiner), Mr. Darren Schuberg (Supervisory Patent Examiner), and Mr. Wael Fahmy (Supervisory Patent Examiner) as the conferees.

Respectfully submitted,

/Diana C Garrity/

Examiner, Art Unit 2814

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Conferees:

/Wael M Fahmy/

Supervisory Patent Examiner, Art Unit 2814

/Darren Schuberg/

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